



Fermilab
ES&H Section

July 17, 2002

TO: Bruce Baller and Nancy Grossman

FROM: Don Cossairt

SUBJECT: Comments on the Review of NuMI Beamline Radiation Safety Issues - July 17, 2002

I only have a few comments, most of which I expressed during the review.

1. As a general comment, it is my observation that important radiation safety issues have been, or are being, adequately addressed. A tremendous amount of effort has been expended and a lot of high quality work has been done. The remaining tasks, while important, consist largely of finishing off documentation. At this point, it appears the project is reaching the point of diminishing returns and should wisely choose those points to pursue further to higher levels of accuracy and reduced levels of uncertainty. For some topics, further pursuit of excellence may not be worth the effort required.
2. I had thought, obviously mistakenly, that the need for an MOU with the ES&H Section had been addressed. As stated yesterday, I will take care of this annoying "loose end" to get it off the books. You should hear from me soon. If you do not hear from me by mid-August, please press me on this.
3. Concerning primary beamline accidents, I am concerned that voltage monitoring to prevent grossly miss-steered beams is being given up on too easily. In the Tevatron fixed target era, there were at least two beamlines that employed such interlocks (MP and PB) to assure safe operation of sweeping magnets associated with neutral secondary beams at zero degrees. I do not recall any complaints about budgetary concerns for these interlocks. At any rate, the table on p. 16 of Nancy's overheads needs a bit more explanation as to what the accident conditions are if this table is to be included in some other document.
4. In Nancy's presentation, page 18, if this is to be used elsewhere, there should be some statement that one cannot just take simple ratios in the table to get the rightmost column. It is only vaguely clear about what is being "averaged". In particular, which inflow value was used? The latter are, as noted during the talk, "ratios" rather than "%s".
5. In Nancy's presentation, page 21, at multiple points, rates of production are indicated when what is really meant are the results of buildup of activities, or activity concentrations, over a one year irradiation. This makes a small difference for tritium, but represents a large one for ^7Be . An example is under "Horn 1 RAW water system...", 7 Ci/yr is shown when what is meant a total activity of 7 Ci after one year of irradiation. This shows up in the table on p. 23 as well.

6. Concerning the use of lead. I am certainly opposed to the use of ANY lead in a region where it will become activated, or activated to higher levels than now present (for recycled lead). The disposal of this material as “mixed waste” is nearly impossible now. It is probable that this situation will only get worse. It is simply irresponsible to generate more of it. However, this material remains a most useful tool for shielding activated components in locations where the lead will not become activated itself as a tool to keep doses ALARA.